

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on April 15, 2008 has been entered.

Response to Arguments

2. Applicant's arguments with respect to claims 1 to 9 and 18 to 27 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1 to 9 and 18 to 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Japanese patent 2002-12940 to Hideto Kimura (hereinafter JP'940) in view of US Patent 3,733,195 to Nishi et al. (hereinafter US Patent '195) or US Patent 4,407,681 to Ina et al. (hereinafter US Patent '681).

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5. The English abstract of JP'940 teaches a crude oil tank fabricated from a steel having a composition with constituents whose wt% ranges overlap those recited by the claims; such overlap in wt% ranges establishes a prima facie case of obviousness since it would be obvious for one skilled in the art to select the claimed alloy wt% over the broader disclosure of the prior art because the prior art teaches the same utility and similar high corrosion resistant properties, see MPEP 2144.05.

6. More specifically, steel 32 in table 2 on page 7 of JP'940 closely meets claim 1 except for 0.22% Mo which is slightly higher than the claimed Mo range of 0.01 to 0.2%. Nevertheless, it would be obvious for one skilled in the art to lower Mo content since a broad Mo range of up to 0.50% is taught in paragraph [0027]. In addition, when calculated, prior art steel 32 has a $C_{eq} < 0.4\%$ and satisfies claim 3.

7. Even though JP'940 does not teach adding one or more elements from the group consisting of Sb, Sn, Pb, As or Bi and/or one or more elements selected from the group consisting of Mg, Ca, Y, La and Ce as recited by one or more of the dependent claims, such would not be a patentable difference. Note that it is well known in the metallurgical art to add small amounts of said elements to analogous low-alloy steel for crude oil tank fabrication to further improve corrosion resistance as evident by lines 19 to 60 in column 4 of US Patent '195 and lines 1 to 14 in column 5 of US Patent '681. Since corrosion resistance is desired and sought by JP'940, then it would be an obvious modification for one skilled in the art to add these elements in view of secondary teachings to produce no more than the known and expected effect from such an addition.

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8. Even though solute Mo+ solute W $\geq 0.005\%$ as recited by claim 2 or the area percentage of microscopic segregation portions where the Mn concentration is 1.2 times or more the average Mn concentration in the steel is 10% or less as recited by claim 9 is not taught by JP'940, such properties would be expected since composition is closely met and in absence of proof to the contrary.

9. Claims 1 to 8 and 18 to 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 4,407,681 to Ina et al. (hereinafter US Patent '681) in view of US Patent 3,733,195 to Nishi et al. (hereinafter US Patent '195).

10. US Patent '681 on lines 10 to 54 in column 2 teaches a crude oil tank fabricated from steel having a composition with constituents whose wt% ranges overlap those recited by the claims; such overlap in wt% ranges establishes a prima facie case of obviousness since it would be obvious for one skilled in the art to select the claimed alloy wt% over the broader disclosure of the prior art because the prior art teaches the same utility and similar high corrosion resistant properties, see MPEP 2144.05.

11. More specifically, steel 5 in table 1 of columns 7-8 closely meets claim 1 except does not contain Cu. Nevertheless, it would be obvious for one skilled in the art to add Cu since a broad Cu range of 0.1 to 0.35% is taught on lines 9 to 20 in column 4. In addition, when calculated, prior art steel 5 has a $C_{eq} < 0.4\%$ and satisfies claim 3.

12. Even though US Patent '681 does not teach adding one or more elements from the group consisting of Sb, Sn, Pb, As or Bi as recited by one or more of the dependent claims, such would not be a patentable difference. Note that it is well known in the metallurgical art to add small amounts of said elements to analogous low-alloy steel for

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crude oil tank fabrication to further improve corrosion resistance as evident by lines 19 to 60 in column 4 of US Patent '195. Since corrosion resistance is desired and sought by US Patent '681, then it would be an obvious modification for one skilled in the art to add small amounts of Sb, Sn, Pb, As or Bi in view of secondary teaching to produce no more than the known and expected effect from such an addition.

13. Even though the solute Mo+ solute W $\geq 0.005\%$ as recited by claim 2 or the area percentage of microscopic segregation portions where the Mn concentration is 1.2 times or more the average Mn concentration in the steel is 10% or less as recited by claim 9, is not taught by US Patent '681, such properties would be expected since composition is closely met and in absence of proof to the contrary.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Deborah Yee whose telephone number is 571-272-1253. The examiner can normally be reached on monday-friday 6:00 am-2:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on 571-272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Deborah Yee/
Primary Examiner
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/DY/